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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,981	04/11/2005	Masahiro Hamada	576P072	9251
42754	7590	05/15/2008	EXAMINER	
Nields & Lemack 176 E. Main Street Suite #5 Westboro, MA 01581			ZIMMER, MARC S	
			ART UNIT	PAPER NUMBER
			1796	
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			05/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,981

Applicant(s)

HAMADA ET AL.

Examiner

MARC S. ZIMMER

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama et al., U.S. Patent Application Publication No. 2005/0271922 in view of Kubota et al., U.S. Patent # 6,410,656.

Applicant has submitted for the Examiner's consideration a third Rule 1.132 Declaration wherein the conditions of the prior art syntheses are replicated exactly. Therein, Applicants establish that the first two sulfonation methods outlined at the top of column 7 of Kubota do not, in fact, "provide a sulfomethyl polyether sulfone having sufficient ion-exchange ability usable as an ion-exchange polymer."

It shall first be noted that the claims are silent concerning the ion-exchange ability of the polymers derived by the claimed method. In the Examiner's estimation, if is Applicants' objective to prove the unobviousness of their method by illustrating that the other methods do not yield a polymer having this property, the property should at least be recited in the claims. (Applicant is further advised that the Examiner has concerns as to whether or not a statement that the polymer, "has sufficient ion-exchange ability usable as an ion-exchange polymer" would be indefinite. It would be helpful if Applicant were able to claim a minimum ion capacity expressed using the units meq/g but the

Examiner did not see a threshold below which a polymer ceases to have the aforementioned ion exchange ability indicated anywhere in the Specification.)

Ultimately, the Examiner is sincerely unclear as to what precisely Applicants have been attempting to demonstrate with the evidence that has been furnished as their intent is not explicitly delineated. The Examiner appreciates that the record reflects that a couple of the synthetic approaches mentioned by *Kubota* do not actually provide an efficient route for preparing a fully sulfonated polymer from a halomethyl-functionalized polymer precursor where the polymer is a polyether sulfone. However, it is respectfully submitted that there is nothing especially inventive, nor is there a particularly heavy burden, in evaluating two or three different known synthetic approaches for making a sulfonated polymer from a starting material that is expressly disclosed in the primary reference *Koyama*, i.e. comparable polymer materials bearing haloalkyl substituents on the aromatic ring(s) according to paragraph [0041], and selecting the best process, best in terms of the extent of conversion to product, ease of purification, and the like. Had the primary reference contemplated a fairly large number of synthetic strategies that could be employed to prepare the polymers disclosed therein, the identification of the best one *might* have then become a basis for patentability. However, *Koyama* mentions only a rather limited number of methods and arriving at the best of these by testing them individually would have been obvious.

Concerning claim 7, even had Applicants managed to prove the claimed methods unobvious, claim 7 would still be unpatentable because (i) preparation of an acetylthiomethyl-functionalized precursor is certainly disclosed, and (ii) any deviations in

the outcome of the first two synthetic methods discussed at the top of column 7 of Kubota from that of the third appear to occur at the oxidation step, not at the intermediate formation step.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **MARC S. ZIMMER** whose telephone number is (571)272-1096. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

May 13, 2008

/Marc S. Zimmer/
Primary Examiner, Art Unit 1796